

# Individual prevention and organized screening: a reflection on data of the access of early detection of breast cancer in Emilia-Romagna, and in Bologna in particular, after the reorganization of the offering<sup>1</sup>

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## Introduction

The data (2002-2016) from the Regional Health Service of Emilia-Romagna on the access to the mammographic services in the Local Health Authorities (AUSLs) of the region (data accessed as generalized civic access) allowed (poster at AEA Meeting 2020) to identify the different choices (YES screening; NO screening) for the early detection of breast cancer undertaken by the women in Bologna and in the other AUSLs in Emilia-Romagna after the solutions adopted after 2010 to deal with the problems of waiting lists and the control of spending for the services of early detection of breast cancer, redirecting the services toward the screening of public health (poster at AEA Meeting 2017).

To better understand what happened in the early detection of breast cancer in Bologna after 2010, women residing in the Bologna AUSL who underwent at least one mammogram in 2010 in spontaneous access or in scheduled screening were taken into consideration and the choices they made in the following years up to 2016, the last available year, were analyzed (paper at WEAL meeting in March 2021).

Thus in 2016 it appears that 58,1% of women who had had one or more mammograms through spontaneous access in 2010 progressively did not have any more mammograms (at least within the National Health Service), neither in spontaneous access nor in scheduled screening.

Now in this new paper we examine the different behavioral patterns of women with respect to early detection of breast cancer in Emilia-Romagna, and in particular in Bologna, and we study their different reactions to changes in the offering. We, therefore, want to compare our results with the new debate taking place in Italy (National Screening Observatory, Italian Group for Mammographic Screening, Surveillance PASSI of the Istituto Superiore di Sanità) on the early detection of breast cancer and on the organized screening.

## Methods and Materials

From the ASA database (Assistenza Specialistica Ambulatoriale - Outpatient Specialized Assistance) the bilateral mammographic services related to women resident in Emilia Romagna who carried out the service in an Emilia Romagna facility under the Italian NHS regime were extracted.

In the received file (about 5,000,000 bilateral mammographic service records) the following fields are present: YEAR: identifies the year in which the service was performed; COD\_AZI: identifies the Local Health Authority of territorial location of the supplying structure; COD\_STR1: identifies the code of the supplying structure through STS11 coding; COD\_STR: identifies the code of the supplying structure and the name at 2016 (not all the structures of the past years have a name, for example the structures closed, which is why the code was also given); USL\_RES: identifies the Local Health Authorities (AUSL) of residence of the client; ID\_PAZ: numerically identifies a patient; PRESTAZ: identifies the code and the name of the bilateral mammogram; DT\_EROG: identifies the delivery date; ETA: identifies the age of the patient at the time the service is provided; Screen: s for services performed in screening, n for services performed in another way.

The ASA database has existed since 2002 and entered into force after 2005. The year 2016 was delivered not yet complete because there is no the last data sending.

In this part of the work I start to evaluate the personal impact of the reorganization of the offer of early detection services for breast cancer for women that want to access to mammograms and to describe the choices of women (in the AUSL of Bologna) and how they have dealt with the reorganization of the offer from year to year starting from the regional provisions of 2010.

## A Life Course

It was decided to analyze in greater detail the experience of the women who were assisted by the breast diagnostic center of the Ospedale Maggiore in Bologna. The center was closed in 2012 and the activity was transferred to the Bellaria Hospital in the new Breast Unit active only for population screening mammograms. This case was at the origin of the current research work on the early detection of breast cancer and its reorganization in Emilia-Romagna and in Bologna in particular.

From the data relating to the mammograms received from 2002 to 2016 by the 239 women resident in the Bologna AUSL aged 55 (age at which they should have already started their early detection of breast cancer and therefore they should have chosen the strategy that best corresponds to their needs, and age in which they have an early detection of breast cancer path after 2010 that is still very long) who in 2010 received a bilateral mammogram in spontaneous access at the breast diagnostic center of the Maggiore Hospital of Bologna interesting information emerges.

First of all, it should be noted that the vast majority of these women had mammograms for early detection prior to 2010 within the National Health Service, always in spontaneous access. There are very sporadic cases in which these women access population screening mammogram before 2010.

On adherence to the prescriptions in terms of timing of early detection, from these data, it seems that there is no complete adherence. Before 2010, however, there is a substantial group that shows the maintenance of a good cadence.

The choices of these women after 2010 are much more varied. The presence in their early detection of breast cancer from 2011 to 2016 of at least one mammogram within the population screening program is predominant. In a good nucleus of women, among those who have definitively passed to population screening, the biennial adherence is maintained. Another group, still managing to receive the mammogram in spontaneous access, maintains the annual frequency. 34 women from 2013 to 2016 no longer appear in the database and therefore do not receive mammograms or no longer receive it within the National Health Service and screening programs.

Compared to the longitudinal analysis carried out on all women residing in the Bologna AUSL, the group of 55-year-old women who received a spontaneous access mammogram in 2010 at the breast diagnostic center of the Ospedale Maggiore seem much more involved in their path of early detection of breast cancer. They maintain this involvement also in a situation that has changed considerably from 2010 onwards, and that forced them to leave from May 2011 a usual and high-level place for the protection of their health, as the breast diagnostic center of the Maggiore Hospital was.

The Center was no longer operating after the reorganization of the early detection of breast cancer in the AUSL of Bologna, given the solutions adopted in 2010 to address the problems of waiting lists (and the control of spending) by the Regional Health Service of the Emilia-Romagna.

These women do not present the levels of abandonment highlighted by the global longitudinal survey and manage in a good group to still keep a cadence (although almost never annual or constant biennial) during the time.

Tab. 1 - 2011-2016 choices on early detection of breast cancer of the 239 women residing in AUSL of Bologna receiving a mammogram in spontaneous access in 2010 at the age of 55 in Bologna at breast diagnostic center of the Maggiore Hospital

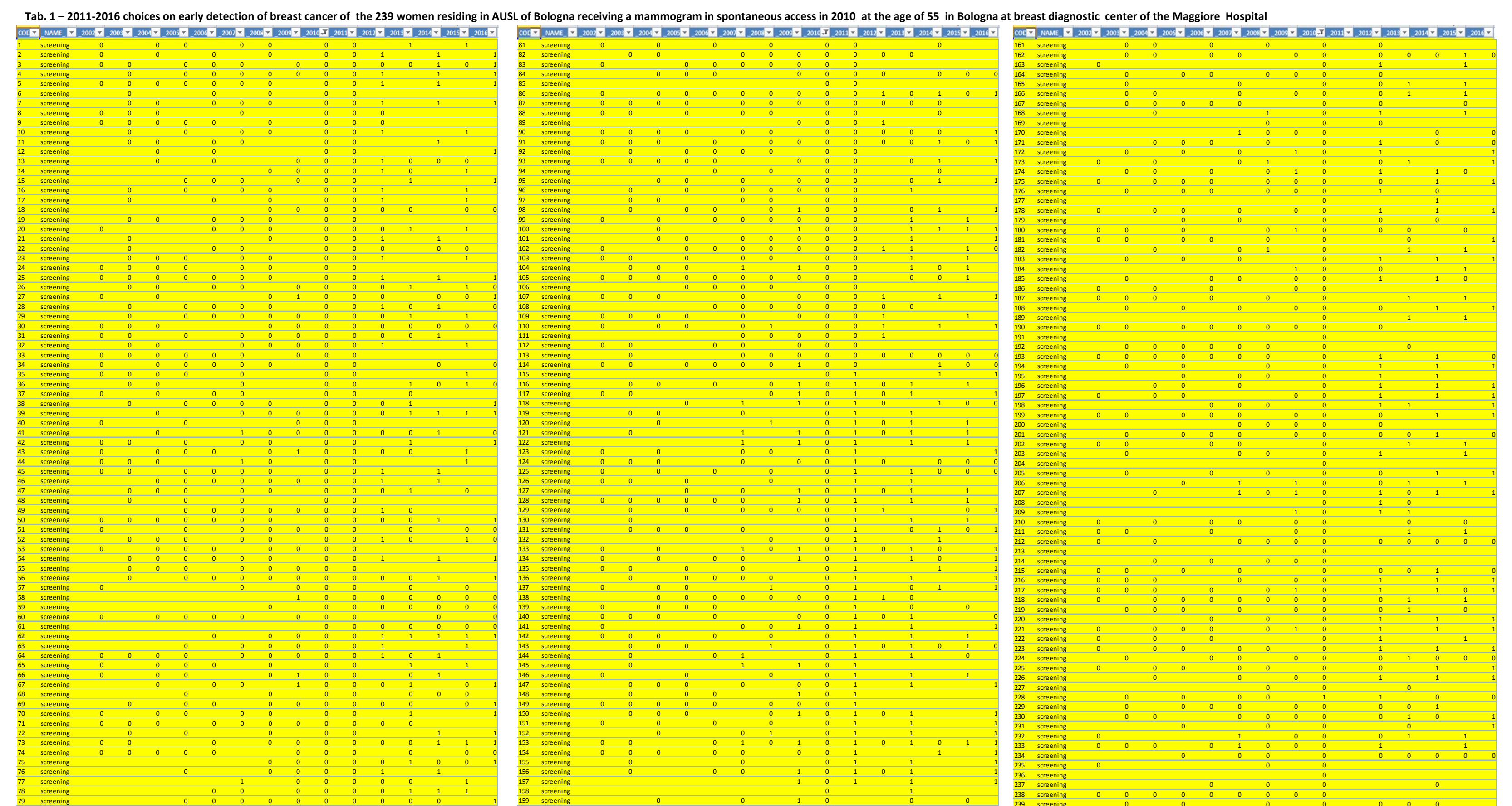
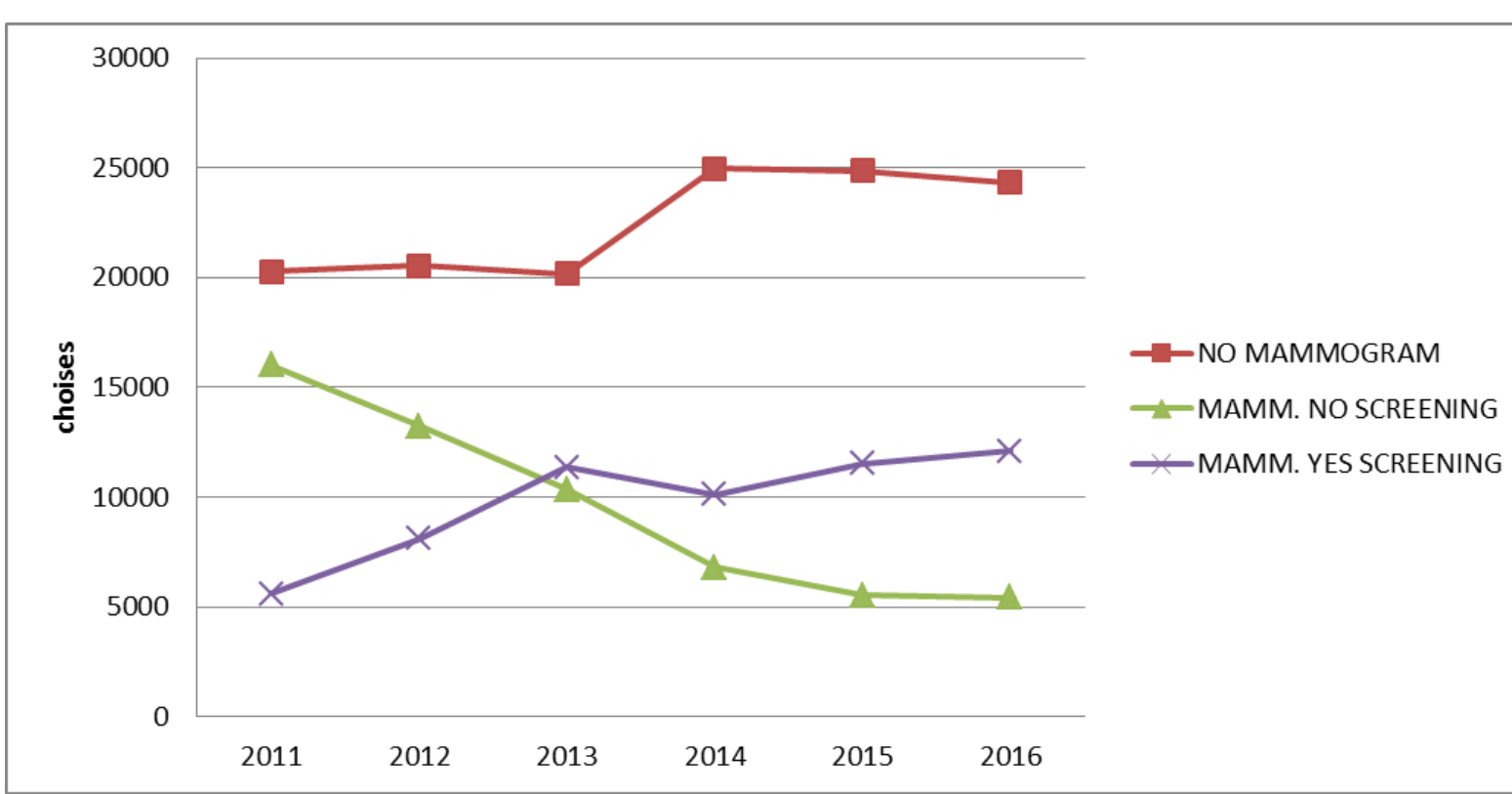
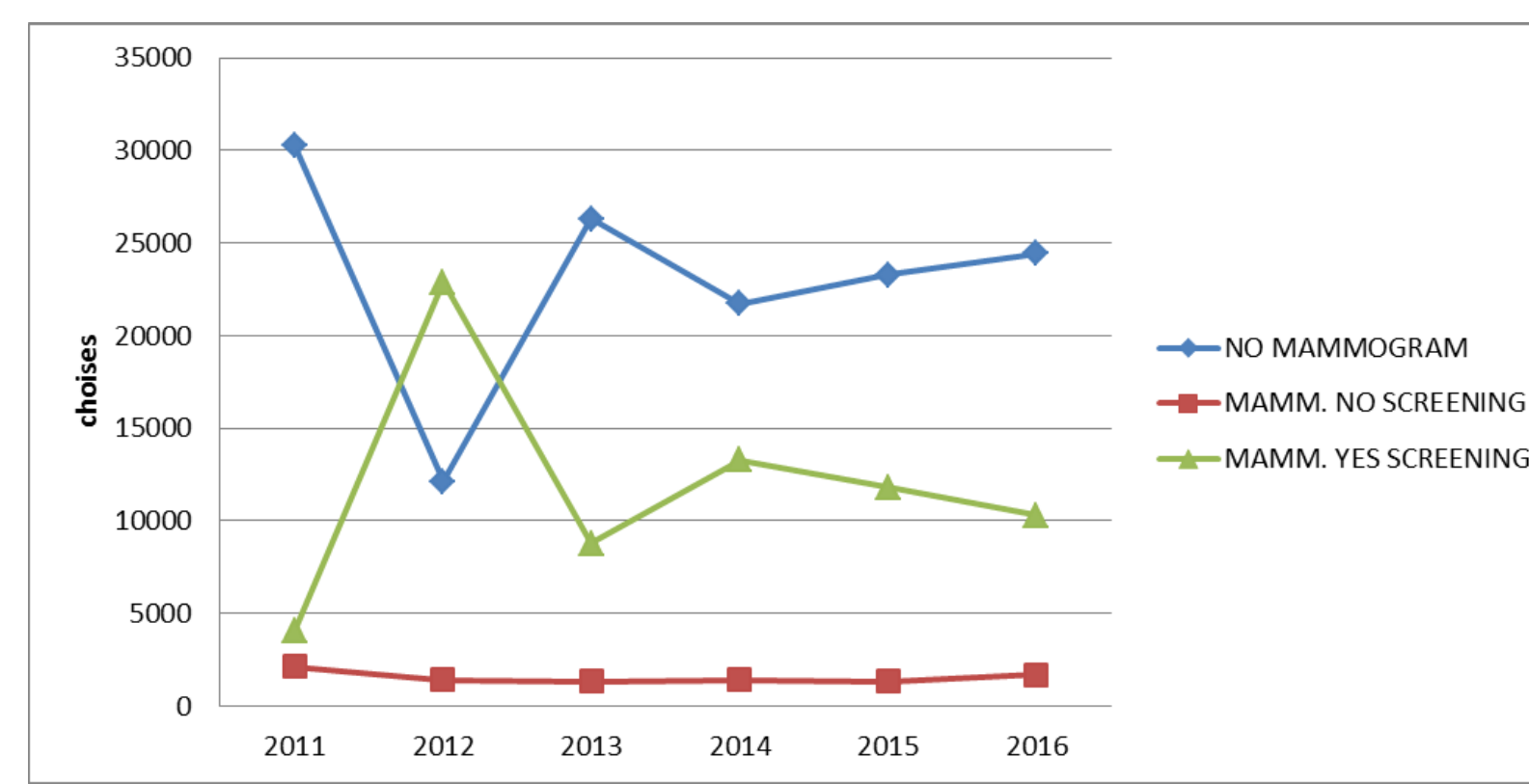


Fig. 1 - 2011-2016 choices on early detection of breast cancer of women residing in AUSL of Bologna receiving a mammogram in spontaneous access in 2010 in Bologna



Source: my elaboration on data of the SSR Emilia-Romagna

Fig. 2 - 2011-2016 choices on early detection of breast cancer of women residing in AUSL of Bologna receiving a mammogram in programmed screening in 2010 in Bologna



Source: my elaboration on data of the SSR Emilia-Romagna

## Results

But what has happened within the health system since the Emilia-Romagna Regional Health Service decided to adopt measures to contain waiting lists in 2010 and in the Bologna AUSL it was decided to redirect the early detection of breast cancer in spontaneous access to the population screening under the responsibility of the Public Health Service?

First of all, in Italy and Emilia-Romagna the reminders of the PASSI Surveillance of the Istituto Superiore di Sanità do not cease on the fact that "the promotion and effectiveness of mammography screening grows if the invitation of the AUSL is accompanied by the advice of your doctor or a health care practitioner. The invitation letter alone is not enough to guarantee the participation of women in screening, while medical advice is essential" (Istituto Superiore Sanità - Epicentro, 2021 and Carrozzi, 2019).

Other changes have occurred. For the early detection of breast cancer, work is being done on customizing it with respect to the characteristics of each woman. The personalization of the early detection of breast cancer involves both technological factors and the modalities of medical approach to women's health. At an international level and with European Union funding, for example, to investigate whether a "personalized breast cancer screening" could be a better screening option for women aged 40 to 70, the MyPeBS project was launched in 2018 with a deadline in 2026. For Italy it is the leader of the project of the Local Health Authority (AUSL) of Reggio Emilia IRCCS, with the Reference Center for Epidemiology and Cancer Prevention in Piedmont (CPO) at the AOU Città della Salute e della Scienza (Turin) and Institute for Cancer Study and Prevention.

Another important element of change in these years was the establishment in Italy of the Breast Units starting from 2016, following the request of 2006 by the European Union to establish Breast Centers in all countries. There is a wide debate within the world of mammography screening (Italian Group for Mammography Screening, National Screening Observatory) with respect to the changes that the Breast Units have brought in the field of Breast Pathology, and in particular on how the adoption of new guidelines, new recommendations and methodologies can be included in the process of integrating screening programs and Breast Units, taking into account that at European level there is no clear indication on how screening programs and Breast Units should work on the common ground of early detection of breast cancer.

It seems that the emphasis of the PASSI Surveillance on the need to relaunch the role of the doctor or health worker in advising women to participate in mammography screening, the launch of a path for a personalized breast cancer screening at an international level to improve the effectiveness of early detection of breast cancer, the establishment of Breast Units that do not belong to the public health sphere, but to that of the protection of individual health are changing the perspectives of the early detection of breast cancer by redirecting it towards the individual rather than the population.

## A Longitudinal Study

To better understand what happened in the early detection of breast cancer in Bologna after 2010, women residing in the Bologna AUSL who underwent at least one mammogram in 2010 in spontaneous access were taken into consideration (41,863, of which 14,175 were 69 years and over and could progressively exit early detection in subsequent years) or in scheduled screening (36,423, of which 8,086 were 69 years and over and could progressively exit early detection in subsequent years) and the choices they made in the following years up to 2016, the last available year, were analyzed.

Women who in 2010 had made early detection of breast cancer through spontaneous access mammograms in the following years had less and less access to spontaneous access mammograms, with a progressive decline that led them to access only 5,438 spontaneous access mammograms in 2016. If from 2011 to 2013 they increased access to mammograms in scheduled screening, and from 2014 they remained relatively constant in this type of access to early detection until 2016, on the other hand between 2013 and 2014 there was a leap in the non-performance of mammograms neither in spontaneous access, nor in scheduled screening which was then maintained until 2016. Thus in 2016 it appears that 58,1% of women who had had one or more mammograms in 2010, after the changes in the organization of the offer of early detection services in the Bologna AUSL of 2011-2012, progressively did not have any more mammograms, neither in spontaneous access nor in scheduled screening. From the database, obtained in civic access by the Regional Health Service (SSR), it is not possible to know if there has been a definitive abandonment of the early detection of breast cancer or if women have opted for mammograms with direct payment out of pocket, perhaps in intramoenia in the same public structures (Gatti, 2016; Gatti, 2017). 28.9% of women who had had one or more mammograms in 2010 progressively opted for mammograms in scheduled screening and progressively only 13.0% of them still underwent spontaneous access mammogram (fig. 1). Also from the database it is possible to verify that from the more than 12 thousand mammograms per year in spontaneous access offered by the Maggiore Hospital in the period 2010-2011, we have gone to an average of 2500 mammograms per year offered in the period 2012-2016, without any replacement by the Bellaria Hospital (only in 2015 and 2016 about 600 mammograms per year were offered). The other 3 thousand mammograms still carried out in 2016 by some of the 40 thousand women who in 2010 had access to the early detection of breast cancer in spontaneous access are therefore offered by the AUSL of Bologna in structures with lower quality standards and not certified EUSOMA (European Society of Breast Cancer Specialists) (Wilson, Marotti, Bianchi et al., 2013), (Gatti, 2016), (Gatti, 2017).

The trend of mammograms for the early detection of breast cancer in the period 2011-2016 of the women of the AUSL of Bologna who in 2010 underwent one or more mammograms in scheduled screening seems to be able to be explained in the biennial frequency of scheduled screening, and here too with a progressive abandonment of mammograms (at least within the National Health Service)(fig. 2).

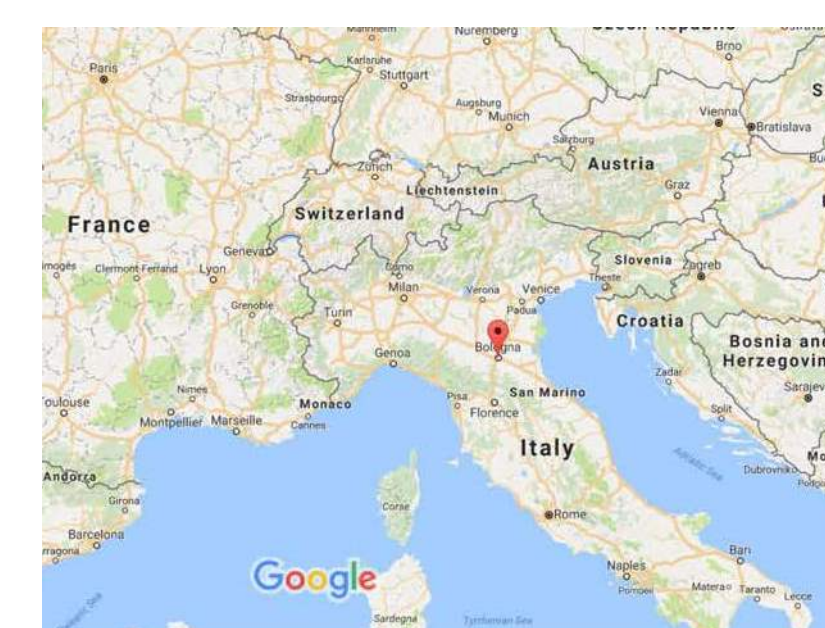


Figure A. The City of Bologna

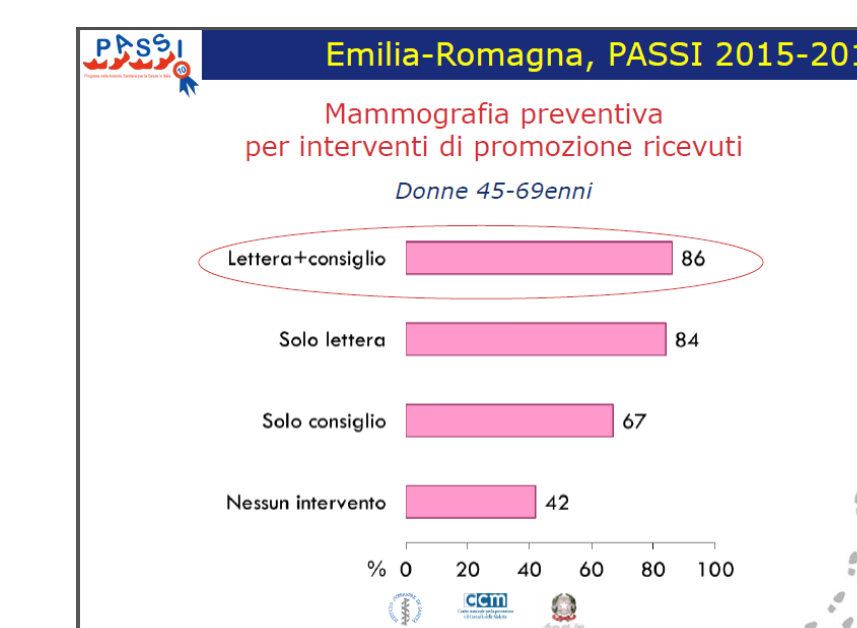


Figure B. Preventive mammogram on the basis of received promotional interventions

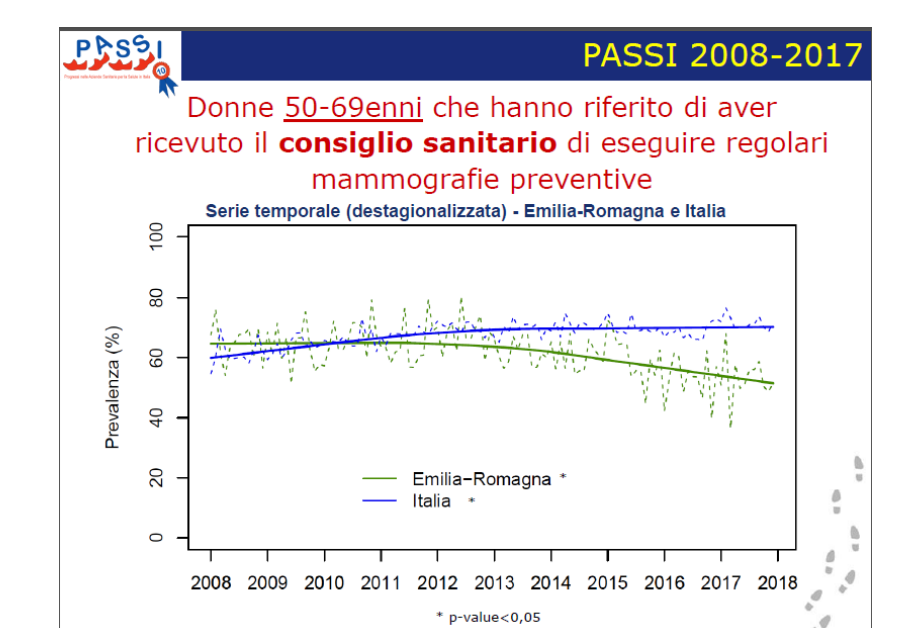


Figure C. Women 50-69 reported receiving health advice to have regular preventive mammograms

## Conclusions

The possibility of having access as a citizen to the data on the early detection of breast cancer in Emilia-Romagna is an important tool for assessing the impact of the changes in health policies at regional and local level. In the meantime, work is still being done on different fronts, and this time perhaps with the needs of the person at the center, to improve the early detection of breast cancer. With 360,000 new diagnoses and 92,000 deaths each year in Europe, breast cancer remains the most common cancer in women, but is more often curable if diagnosed early enough.

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